

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO**

FILED
United States District Court
Albuquerque, New Mexico
Mitchell R. Elfers
Clerk of Court

In the matter of the Search of

INFORMATION THAT IS STORED AT PREMISES
CONTROLLED BY GOOGLE, 1600 AMPITHEATRE
PARKWAY, MOUNTAINVIEW, CALIFORNIA 94043

Case No. 22-MR-633
Filed Under Seal

DECLARATION OF MARLO MCGRUFF IN SUPPORT OF MOTION TO QUASH

1. I am a Location History Product Manager at Google, where my responsibilities include the Location History product. I joined Google in 2011 and have been in my current role since 2016.

2. I lead the cross-functional Location History team and am the overall Location History lead, setting the near-term goals and long-term strategy for the product.

I. Google Location History

3. Some Google services require a user to have a Google Account before they can use the service at all, like Gmail. Other services do not require a user to have an account, but offer additional functionality that is only available to Google Account holders, like Maps and Search.

4. Google Location History ("LH") is a service that Google Account holders may choose to use to build a personal Timeline to help them keep track of locations they have visited while in possession of their compatible mobile devices. LH is not available to users who do not have a Google Account. The service is only available for Account holders who explicitly opt into it.

5. Google Account holders can visualize their LH data in their Timeline, which also allows them to edit and control the record of their travels, as in a journal of their place visits (e.g., visit to a ski resort), activities (e.g., driving), and paths between place visits (e.g., driving

from hotel to ski resort). Through Timeline, an Account holder can see where and when over a given period they have traveled with their mobile device.

6. Account holders who opt into and use LH can access other benefits on their Google devices or applications as well. For instance, they can obtain personalized content or recommendations based on places they have visited.

7. For LH to function and save information about an Account holder's location, the Account holder must take several steps. First, they must ensure that the device-level location setting on their mobile device is turned on. When the device-location setting is activated, the mobile device automatically detects its own location, which the device ascertains based on GPS signals, Wi-Fi connections, and/or cellular networks. On iOS devices, they must further configure their mobile device to share location information by granting the required device-level application location permission.

8. Second, the Account holder must opt into LH at the account level. And to actually record and save LH data about where the Account holder has traveled with their mobile device, they must travel with that device while the device is signed into the Google Account.

9. When an Account holder takes the above-mentioned steps, the resulting data is communicated to Google for processing and storage. Google maintains this data in a database that houses only LH information.

10. LH users can delete some or all LH information. Since the spring of 2019 they can also enable a setting to automatically delete LH that is older than 3, 18, or 36 months.

11. GPS or Wi-Fi-sourced LH information may be considerably more precise than other kinds of location data, including cell-site location information ("CSLI"). That is because, as a technological matter, a mobile device's location-reporting feature can use multiple inputs in

estimating the device's location. Those inputs could include GPS signals (i.e., radio waves detected by a receiver in the mobile device from orbiting geolocation satellites) or signals from nearby Wi-Fi networks in addition to cell towers. These inputs (when the Account holder enables them) can be capable of estimating a device's location to a higher degree of accuracy and precision than is typical of CSLI. For example, I understand that when a strong GPS signal is available, a device's location can be estimated within approximately twenty meters or less.

12. In 2021, the majority of Google Account holders worldwide did not have LH enabled on their account. While a more precise percentage is difficult to calculate in part due to fluctuating numbers of users, in 2021, roughly one-third of active Google Account holders (i.e., numerous tens of millions of Google users) had LH enabled on their accounts.

13. Google also has other types of location data, including in Web & App Activity ("WAA") and Google Location Accuracy ("GLA").

II. Google's Production of LH Information to Law Enforcement

14. I understand that this case concerns a so-called "geofence" request, which seeks LH information for all Google Account holders whose LH information indicates that their device may have been present in a specified geographic area during a certain window of time.

15. In practice, LH is the only form of location data Google maintains that Google believes to be responsive to a geofence request. In particular, even though Google devices and applications might sometimes use or transmit WAA or GLA information about a user's location to Google while the device or application is in use, neither WAA nor GLA data have the ability to place a user in a sufficiently precise location at a sufficiently precise time in a way that is responsive to a geofence request.

16. To conduct a search in response to a geofence request, Google must search across all LH data to identify Account holders with LH data during the relevant timeframe and run a computation against every set of stored LH coordinates to determine which records match the geographic parameters in the warrant. Google does not know which Account holders may have such saved LH data before conducting the search and running the computations.

17. The location data points reflected in LH are estimates based on multiple inputs, and therefore an Account holder's actual location does not necessarily align perfectly with any one isolated LH data point. Each set of coordinates saved to a user's LH includes a value, measured in meters, that reflects Google's confidence in the saved coordinates. A value of 100 meters, for example, reflects Google's estimation that the Account holder's device was likely located within a 100-meter radius of the saved coordinates based on a goal to generate a location radius that accurately captures roughly 68% of users. In other words, Google's goal is that there will be an estimated 68% chance that the Account holder's device was actually located anywhere within the 100-meter radius of the saved coordinates.¹

18. If an Account holder's estimated location (i.e., the stored coordinates in LH) falls within the geographic area defined by the geofence warrant, that location report is responsive to the warrant even if the 68% confidence interval associated with the location report falls partly outside the area defined in the warrant. As a result, it is possible that, when Google is compelled to return data in response to a geofence warrant, some of the Account holders whose locations are estimated to be within the geographic area defined in the warrant (and whose data is therefore included in a data production) were in fact located outside the geographic area. To provide

¹ While Location History is not the same as Google Maps, the blue dot that a user sees in Google Maps indicating Google's estimate of their location similarly reflects Google's goal that there will be an estimated 68% chance that the user's device is actually located within the shaded circle surrounding the blue dot.

information about that, Google includes in the production to the government a radius (expressed as a value in meters) around an Account holder's estimated location that shows the range of location points around the stored LH coordinates that are believed to contain, with 68% probability, the user's actual location.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Executed this 1 day of July 2022, in Mountain View.


Marlo McGriff